

Work Order ID 151059

Monday, September 12, 2016 10:25:45 AM

151059

Page 1

Item ID: D4931-5

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Engine Fitting (for B3e models)

Start Date: 9/8/2016 Start Qty: 8.00

8

Cust Item ID:

Required Date: 9/15/2016 Req'd Qty: 8.00

8

Customer:

Reference:

Approvals: Process Plan: ^{DAS} 21 ₉₋₈₉ Date: SEP 13 2016

Tooling:

Date:

Run Start ***NR1***

QC: Date: SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
----------	--------------

D4931	A
-------	---

100

0.22

100

Hardinge CNC LATHE SMALL

Doosan

Memo

0.45

Doosan Lathe

Machine as per folio FB210

Folio rev: AADWG REV: A

Debur

110

0.00

110

QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.01

Quality Control

DAS

45

9-89

P.T.O.

DAS

45

9-89

2016-9-22

DQA:

Date:

2016-10-7



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date:

SEP 30 2015

Work Order update only ☐

Work Order: <u>151059</u> Part No. <u>D4931-5</u> NCR No. <u>16-6065</u>		DISPOSITION Rework ☐ Scrap ☒ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Cross tube ☐ Water Jet ☐ Engineering ☐ Machining ☒ Small Fab ☐ Prod. Eng. Coord. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐					
Date: <u>16-09-27</u>		Step #: <u>100</u>		QTY Effective: <u>1</u>			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition			<u>16-09-26</u> Completed By <u>JTC</u> SEP 27 2016 Lead hand / Supervisor Approval Verification <u>38</u> <u>9-89</u> SEP 27 2016 QC / QA Coordinator Approval <u>16-09-26</u>		
Inside taper has a groove swirled in it RC. Tooling				change insert Scrap / destroy					
Root Cause Environment ☐ No Re-verification ☐ Design ☐ Operator ☐ Doc/Data ☐ Offset/Setup ☐ Equip/Tooling ☒ Supplier ☐ Handling/Pre ☐ Training ☐ Material ☐ Use for Testing ☐ Internal Transport ☐ Poor Information ☐ Tribal Knowledge ☐ Rushing ☐ LOA ☐ Product Improvement ☐ Substation ☐ Process Improvement ☐ Past Expiry Date ☐ Manufacturing Process ☐ Misidentified ☐ Past Due ☐				FAULT CATEGORY Pressure/Forced ☐ Temperature/Cure ☐ Power Loss/Surge ☐ Positioned Wrong ☐ Bending ☐ Set-up ☐ Folio/Program ☐ Outside Dimensions ☐ Centre Not Concentric ☐ BOM/Route ☐ Grain ☐ Over/Under tolerance ☐ Cracks ☐ Broken/Damage/Defect ☐ Weld ☐ Part Incorrect ☐ Crimp/Kink/Ripple/Wave ☐ Inspection Incomplete/Unqualified ☐ Wrong Stock Pulled ☐ Part Lost/Missing ☐ Cuffs ☐ Contamination ☐ Out of Sequence ☐ Part Moved ☐ Crushing ☐ Countersink ☐ Off-set ☐ Drawing ☐ Heat Treat ☐ Cut Too Short ☐ Mislabeled ☐ Finish ☐ Wave/Twist in Tube ☐ Instructions Incomplete/Unclear ☐ Fit/Function ☐ Misread ☐ ☒ Marks/Chatter ☐ Drill Holes ☐ Mismatched/off center ☐ Turning Sequence ☐					
OTHER :									

Monday, September 12, 2016 10:25:45 AM

151059

Page 2

Accept

N900040100

Setup Start

NS1

Stop

NS2

8

Cust Item ID:

Start Date: 9/8/2016 **Start Qty:** 8.00

Required Date: 9/15/2016 **Req'd Qty:** 8.00

g

Customer:

Reference:

Approvals: **Process Plan:** **Date:** **Tooling:** **Date:**

Run Start

NB1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

[illegible]

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

151059

Monday, September 12, 2016 10:25:45 AM

N900040100

Stop ***NS2***

g

8

Reference:

Stop *NR2*

130

8 SEP 26 2016

DAS
6
9-80

140

0.13

16/9/27 J

DAS
21
9-89 **SEP 27 2016**

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Picklist Print

Monday, September 12, 2016 10:25:45 AM

Page 1

Work Order ID: 151059

151059

Parent Item: D4931-5

D4931-5

Parent Item Name: Engine Fitting (for B3e models)

Start Date: 9/8/2016

Required Date: 9/15/2016

Start Qty: 8.00

Required Qty: 8.00

Comments: IPP REV:A NEW ISSUE 13-09-16 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M303R2.000		Purchased	No				f	6.4200		1.263158			

M303R2 000

303 ROUND BAR 2"

Location

MAT028

m134776

Loc Qty

6.42

6.42

Loc Code

1.5

DAS

45 2016-9-22

9-88

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Tracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

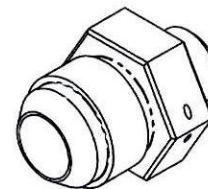
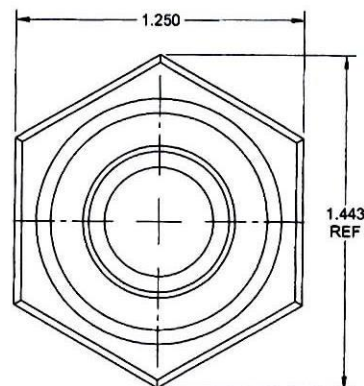
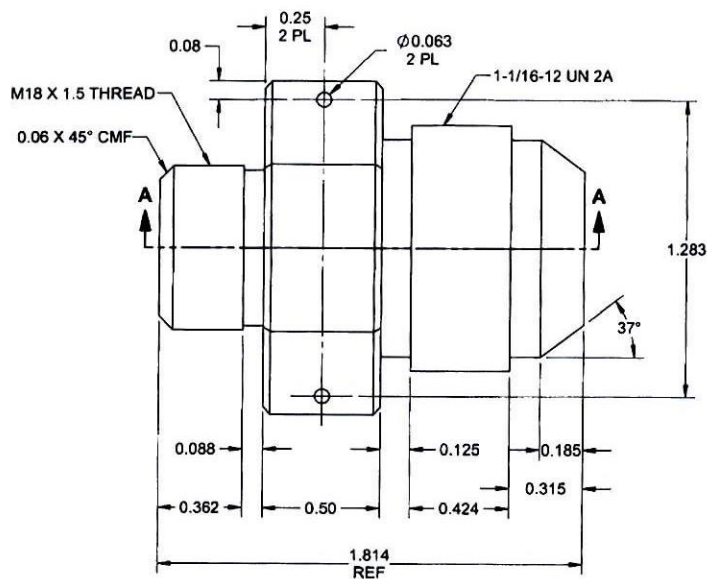
DART AEROSPACE LTD		Work Order: 151055
Description: EAPS P2 Engine Fitting		Part Number: D4931-5
Inspection Dwg: D4931	Rev: A	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
1-1/16-12 UN 2A	N/A	OK	✓		NUT	Shop
37°	+/-0.5°	37°	✓		Chyg	"
0.185	+/-0.010	0.185	✓		depth	OK-07
0.315	+/-0.010	0.315	✓		"	"
0.424	+/-0.010	0.424	✓		Caliper	Steel
0.250	+/-0.010	0.249	✓		"	"
0.938	+/-0.010	0.945	✓		"	"
1.927 Ref	+/-0.010	1.931	✓		"	"
0.25	+/-0.030	0.253	✓		"	"
0.13	+/-0.030	0.130	✓		"	"
0.907	+/-0.010	0.909	✓		"	"
0.078	+/-0.010	0.075	✓		"	"
Ø0.063	+0.004/-0.001	0.065	✓		cal+pin	" + Shop
0.13 x 45°	+/-0.030 x +/-0.5°	0.130	✓		"	"
0.34	+/-0.030	0.34	✓		"	"
0.25	+/-0.030	0.25	✓		"	"
Ø0.238	+0.005/-0.001	0.240	✓		Caliper	JCL-08
35°	+/-0.5°	35°	✓		Angle	Shop
0.532	+/-0.010	0.530	✓		Caliper	Steel
1.063	+/-0.010	1.057	✓		"	"
0.513	+/-0.010	0.512	✓		"	JCL-08
0.749	+/-0.010	0.745	✓		Caliper	Steel
1.025	+/-0.010	1.025	✓		Caliper	JCL-08
1-1/16-12 UN 2A $\phi_{max} 1.0603 / \phi_{min} 1.0493$		1.0565	✓		mic 1-2	OK-03
P Max P Min 1.0995 / 1.0988		1.0986	✓		"	"
over wire .055 DAS						

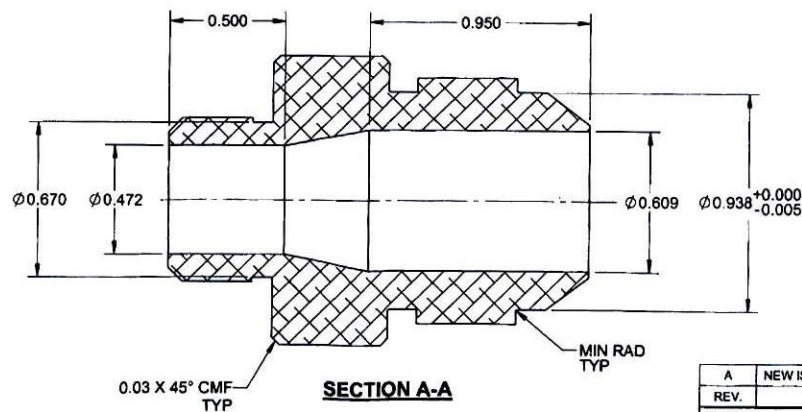
Measured by: 9-89 32 9-89	Audited by: D.A. DAS 08 9-89	Preliminary Approval:
Date: 2016-9-27	Date: 16/09/27	Date:

Rev	Date	Change	Revised by	Approved
A	14.06.24	New Issue	KJ	



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 151059 MJS
1609-13

D4931-1 EAPS P2 ENGINE FITTING
(FOR MODELS B2 AND PREVIOUS)

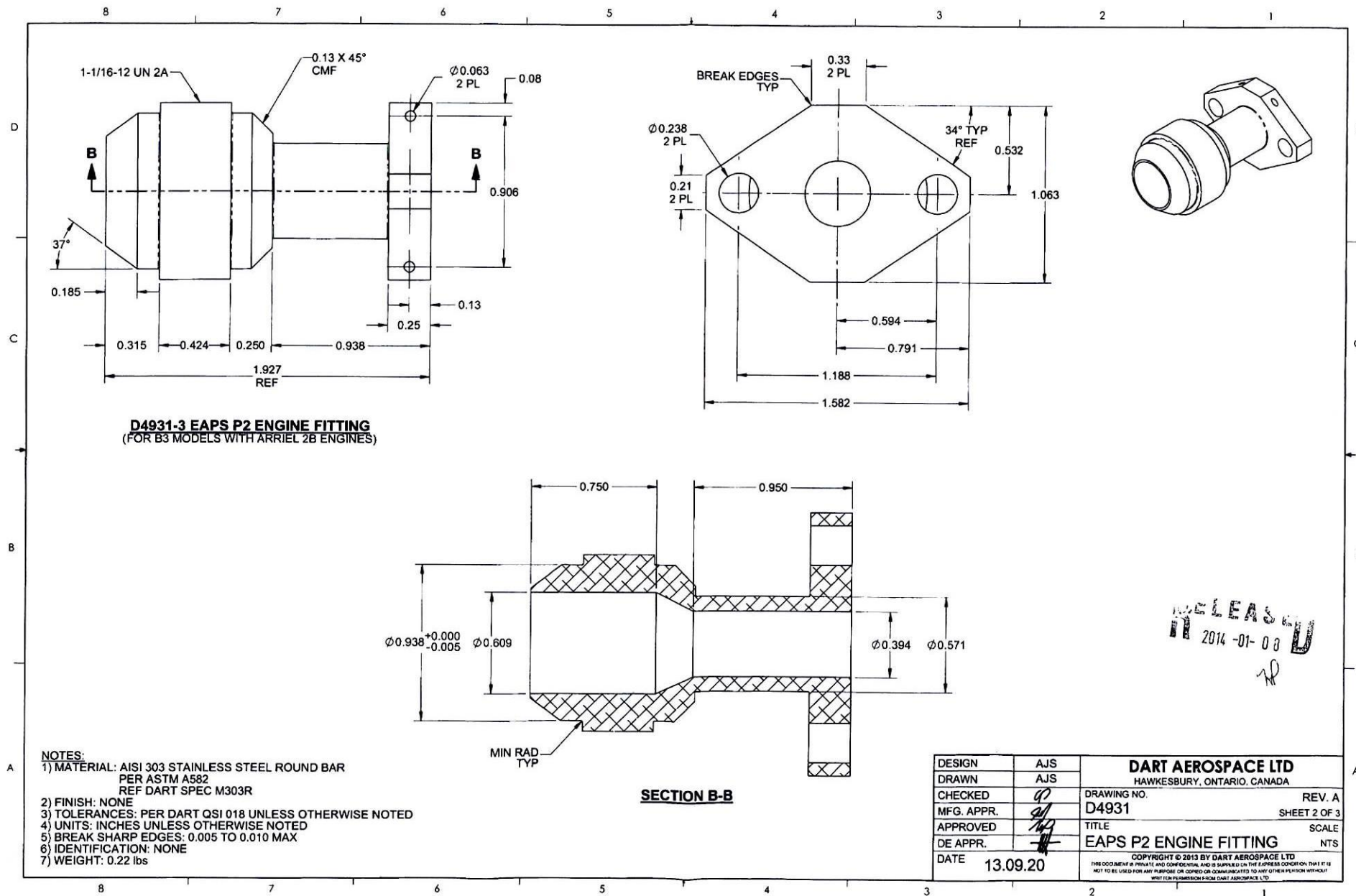


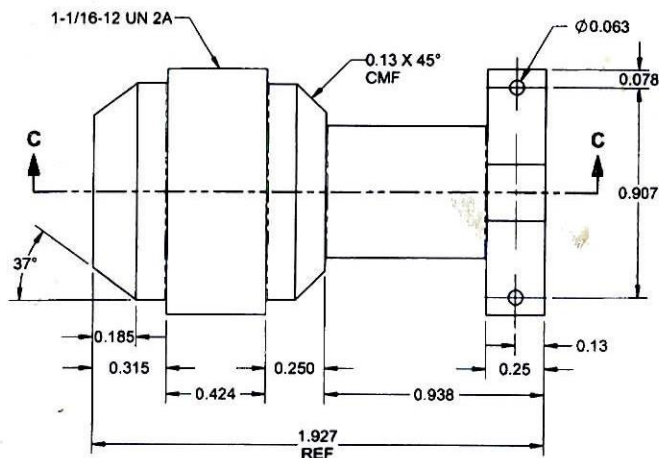
RELEASED
2014-01-03
up

NOTES:

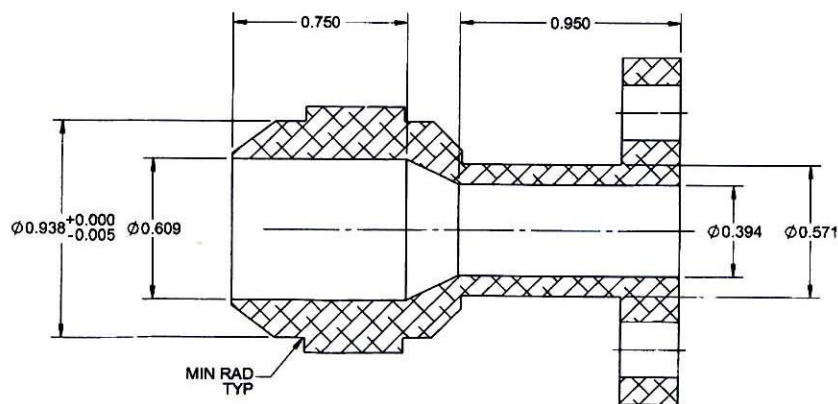
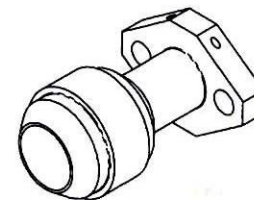
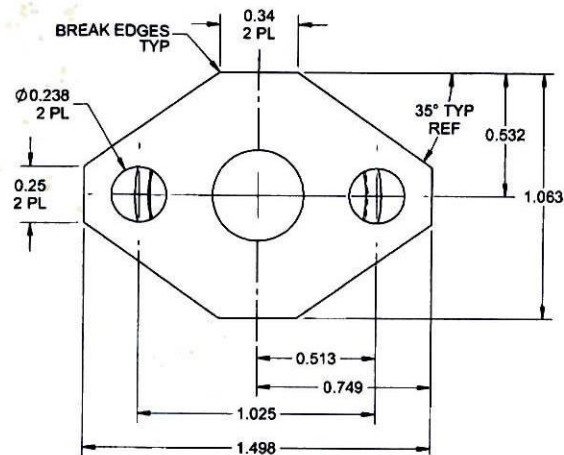
- 1) MATERIAL: AISI 303 STAINLESS STEEL ROUND BAR
PER ASTM A582
REF DART SPEC M303R
OR AISI 303 STAINLESS STEEL HEX BAR
PER ASTM A582
REF DART SPEC M303H
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.30 lbs

A		NEW ISSUE	DESCRIPTION	AJS	13.09.20
REV.				BY	DATE
DESIGN	AJS		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
DRAWN	AJS				
CHECKED	92		DRAWING NO.	REV. A	
MFG. APPR.	21		D4931		SHEET 1 OF 3
APPROVED	14		TITLE	SCALE	
DE APPR.	14		EAPS P2 ENGINE FITTING	NTS	
DATE	13.09.20		COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE, OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD		





D4931-5 EAPS P2 ENGINE FITTING
(FOR B3 MODELS WITH ARRIEL 2D ENGINES)



NOTES:

- 1) MATERIAL: AISI 303 STAINLESS STEEL ROUND BAR
PER ASTM A582
REF DART SPEC M303R
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.22 lbs

SECTION C-C

DESIGN	AJS	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	D4931	SHEET 3 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	EAPS P2 ENGINE FITTING	NTS
DATE	13.09.20	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

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2014-01-08
[Signature]